

Case 2834***Mugil curema* and *M. liza* Valenciennes in Cuvier & Valenciennes, 1836
(Osteichthyes, Perciformes): proposed conservation of the specific names**

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Abstract. The purpose of this application is to conserve the specific names of *Mugil curema* and *M. liza*, both of Valenciennes in Cuvier & Valenciennes (1836) (family MUGILIDAE). The name *curema* is threatened by two senior subjective synonyms, *M. brasiliensis* Spix in Spix & Agassiz, 1831 and *M. gaimardianus* Desmarest, 1831, but it is in use for the Atlantic white mullet, a species which is widely distributed in the Gulf of Mexico, the Caribbean and the Atlantic coast of North and South America, and the coast of West Africa. The name *liza* refers to the liza mullet which occurs along coasts from Bermuda and the southern tip of Florida to Natal, Brazil; this name is threatened by *brasiliensis*. Both species are of considerable economic importance.

1. The identity of the nominal species *Mugil brasiliensis* Spix in Spix & Agassiz, 1831 (p. 134, pl. 72) has remained problematic. The species was described with 'Pinna dorsali posteriore, caudali et anali squamulis minutissimis obtectis', and the anal fin was stated to have 14 rays. Agassiz listed his material as two spirit specimens and a larger, dried specimen in the Zoologische Staatssammlung, Munich. Jordan & Swain (1884, p. 269) quoted a report by Dr Spaegenberg, then curator of the museum, that a dried fish in the collections was the basis of Spix's figure; they identified it as a specimen of *Mugil trichodon* Poey, 1875 (p. 66, pl. 8, figs. 4-8), a species with densely scaled soft dorsal and anal fins and eight anal fin rays. The spirit specimens were thought to represent two further, distinct species. Jordan (1887, p. 571) listed *brasiliensis* with *Mugil liza* Valenciennes, 1836 (p. 83) cited as a synonym. Subsequently, Jordan & Evermann (1896, p. 810) placed *brasiliensis* in the section of their key to species distinguished by 'soft dorsal and anal fins almost naked' and eight anal fin rays (or rarely seven), with *M. liza* as one of its synonyms. This usage was adopted by Schultz (1949, p. 114) and others (see Thomson, 1964, p. 7). On the other hand, Günther (1861, p. 431) adopted the name for a species with scaly dorsal and anal fins and considered *M. curema* Valenciennes, 1836 (p. 87), which has nine anal fin rays, to be a synonym. This was followed by Poey (1875, p. 61) and others (see Thomson, 1964, p. 7). Since the identity of the taxon was

uncertain and the type material no longer extant (see para. 3 below), Trewavas (1950) recommended that the name *brasiliensis* should not be used; this was followed by Carvajal Rojas (1972, p. 18) who adopted the names *curema* and *liza*. Thomson (1964, p. 6) listed *brasiliensis* as a species inquirenda.

2. Alvarez-Lajonchere (1975) recognised that the description (by Agassiz) and the drawing (by Spix) of *Mugil brasiliensis* in the original work present several characters in which it resembles *M. liza* and others that suggest *M. curema*; he also pointed out that there are inconsistencies between the description and drawing, and between these and the characters found in the genus *Mugil* and family MUGILIDAE. Poey (1875, p. 63) had previously noted the imperfection of the drawing. Alvarez-Lajonchere (1975) considered *brasiliensis* to be a nomen dubium and we consider that nomenclatural stability would be best served by suppressing the name.

3. Agassiz's (1831) original specimens of *Mugil brasiliensis* (see para. 1 above), formerly housed in the Munich museum, are believed to have been destroyed by bombing in 1944. Four alcohol-preserved specimens reputedly from Spix's collection were rediscovered in the Neuchâtel Museum, Switzerland, by Dr M. Kottelat, who listed (Kottelat, 1988, p. 84) two of them as putative syntypes. The four specimens have now been examined by one of us (G.J.H.) and colleagues Drs I.J. Harrison and C. Dufour, who found that three specimens represent a *Liza* species and one *Mugil* cf. *hospestes*. The fact that the genus *Liza* Jordan & Swain, 1884 does not occur in American waters casts considerable doubt on their being Spix's specimens. Kottelat noted that Agassiz arranged exchanges of material with other workers and it is possible that these specimens, which have no documentation, derive from some other source.

4. The name *Mugil gaimardianus* Desmarest, 1831 (pl. 109) was based on an illustration of a specimen from Cuba. The plate has long been recognised as inadequate, Valenciennes (1836, p. 88) noting simply that the colour was too brown and too uniform. Poey (1875, p. 64, pl. 8, figs. 1–3) provided the first description of a taxon under this name and this has been cited, together with Desmarest's drawing, in subsequent references to the species. However, Poey's description of a Cuban mullet with a narrower lip than his '*M. brasiliensis*' and other features suggest that he may have been referring to *M. incilis* Hancock, 1830 (see Alvarez-Lajonchere, 1976). Poey (1866, p. 332) considered under one species the names *brasiliensis*, *curema* and *gaimardianus*, remarking that the last had priority; later (1875, p. 61) he tentatively included *gaimardianus* and *curema* in the synonymy of *brasiliensis*. Jordan & Evermann (1896, pp. 814–815) gave another description which clearly corresponds to *M. curema* Valenciennes, as Rivas (1949a) pointed out. For this reason Rivas (1949b) did not include *gaimardianus* among the species found in Florida waters. Mefford (1955), followed by Robins (1958), Broadhead (1958) and Bullis, Roe & Gatlin (1972, p. 44), listed *gaimardianus* as distinct from *curema*. Other authors, for example Meek & Hildebrand (1923, p. 279), have placed the name *gaimardianus* (1831) in the synonymy of *curema* (1836), inappropriately in view of the dates.

5. Alvarez-Lajonchere (1975) pointed out that from the body form of the fish Desmarest's (1831) drawing could be identified as either *M. curema* Valenciennes or *M. trichodon* Poey, 1875, but that there are inconsistencies between the figure and the characters found in these species. The numbers of pelvic and anal fin rays portrayed are not found in the genus *Mugil*, while features shown in the ventral fin do not occur in the MUGILIDAE.

6. Desmarest (1831) did not mention the existence of original material for his new species. Poey (1875) referred to a specimen classified by Desmarest at the Jardin des Plantes, Paris, but this has not been found. Although there are no specimens from Cuba among the syntypes of *M. curema* there is one labelled 'Cuba-Desmarest' (catalogue number MNHN A3613 in the Muséum National d'Histoire Naturelle, Paris) among the syntypes of *M. petrosus* Valenciennes, 1836. One of us (E.T.) has identified this specimen as *curema*. Since Desmarest mentioned no other mullet from Cuba it is possible that this is the holotype of *gaimardianus*, but this cannot be proved. Accepting it as a specimen of *curema* can do no more than support the usual synonymising of *petrosus* with *curema*. In the absence of type material the name *Mugil gaimardianus* Desmarest can only be applied to a species in which the individuals show the same characteristics as Desmarest's published drawing. We consider the name to be a nomen dubium since it is impossible to apply it with certainty to any taxon of the species group. For the sake of stability in the nomenclature we propose that the name be suppressed.

7. The name *Mugil curema* Valenciennes, 1836 was proposed for a South American species. The syntypes in the Muséum National d'Histoire Naturelle, Paris (catalogue nos. MNHN A3653, A4641, A4655 and A4671) leave no doubt as to the identity of the taxon. In describing *curema*, Valenciennes (p. 88) stated that he was certain that *brasiliensis* and *gaimardianus* referred to the same species: 'nous n'hésitons pas à lui rapporter le *mugil brasiliensis* de Spix' and 'c'est cette espèce que M. Desmarest a fait représenter dans la Dictionnaire classique d'histoire naturelle sous le nom de *mugil Gaimardianus*'. Valenciennes's (1836) syntypes of *M. liza* are in good condition in the Muséum National d'Histoire Naturelle; it is apparent that more than one species is represented but *M. liza* as currently understood is a well-recognised and documented species (see Thomson, 1964, p. 47).

8. The names *Mugil curema* and *M. liza* are in use for the white and liza mullets of South America. Both names appear in the checklist of Robins et al. (1980, p. 49), a number of identification guides (see, for example, Guitart, 1975, pp. 309, 310, 313, figs. 236, 239; Thomson, 1977; and Menezes, 1983, pp. 3–5, figs. 5, 7) and in the literature on fish farming (Oren, 1981). A list of a further 21 references demonstrating usage of the names is held by the Commission Secretariat.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary powers to suppress the following specific names for the purposes of the Principle of Priority but not for those of the Principle of Homonymy:
 - (a) *brasiliensis* Spix in Spix & Agassiz, 1831, as published in the binomen *Mugil brasiliensis*;
 - (b) *gaimardianus* Desmarest, 1831, as published in the binomen *Mugil gaimardianus*;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *curema* Valenciennes in Cuvier & Valenciennes, 1836, as published in the binomen *Mugil curema*;
 - (b) *liza* Valenciennes in Cuvier & Valenciennes, 1836, as published in the binomen *Mugil liza*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the following names:
 - (a) *brasiliensis* Spix in Spix & Agassiz, 1831, as published in the binomen *Mugil brasiliensis* and as suppressed in (1)(a) above;

(b) *gaimardianus* Desmarest, 1831, as published in the binomen *Mugil gaimardianus* and as suppressed in (1)(b) above.

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